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AUTHOR Anderson, Carolyn S.
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ABSTRACT

The Comprehensive Tests of Basic Skills in reading, language, and mathematics was administered to 3,417 second through twelfth grade students plus 201 resource room special education students for a total of 3,618 students, 97% of the student population in the Crete-Monee (Illinois) School District, in April, 1986. The test results were compared: (1) to national norms; (2) to last year's scores; (3) for high, middle, and low achievers; (4) for new students overall; and (5) for new and returning students at different grade levels over two years. Results indicated that scores exceeded the national average in all 11 grades tested, in all three tests, with the best performance at second and sixth grade. More students this year than last year scored in the top half of the nation across all grade levels. The general trend over two years was upward for high, middle, and low achievers. Students who were new to the district did not perform as well as returning students in all tests and at all grade levels, but their scores had relatively little effect on average scores in the district. Performance of new students was inconsistent from year to year, but performance of returning students was stable year to year, except for peaks at grades two and six which were attributed to a better curriculum-test match at those grades. (JGL)

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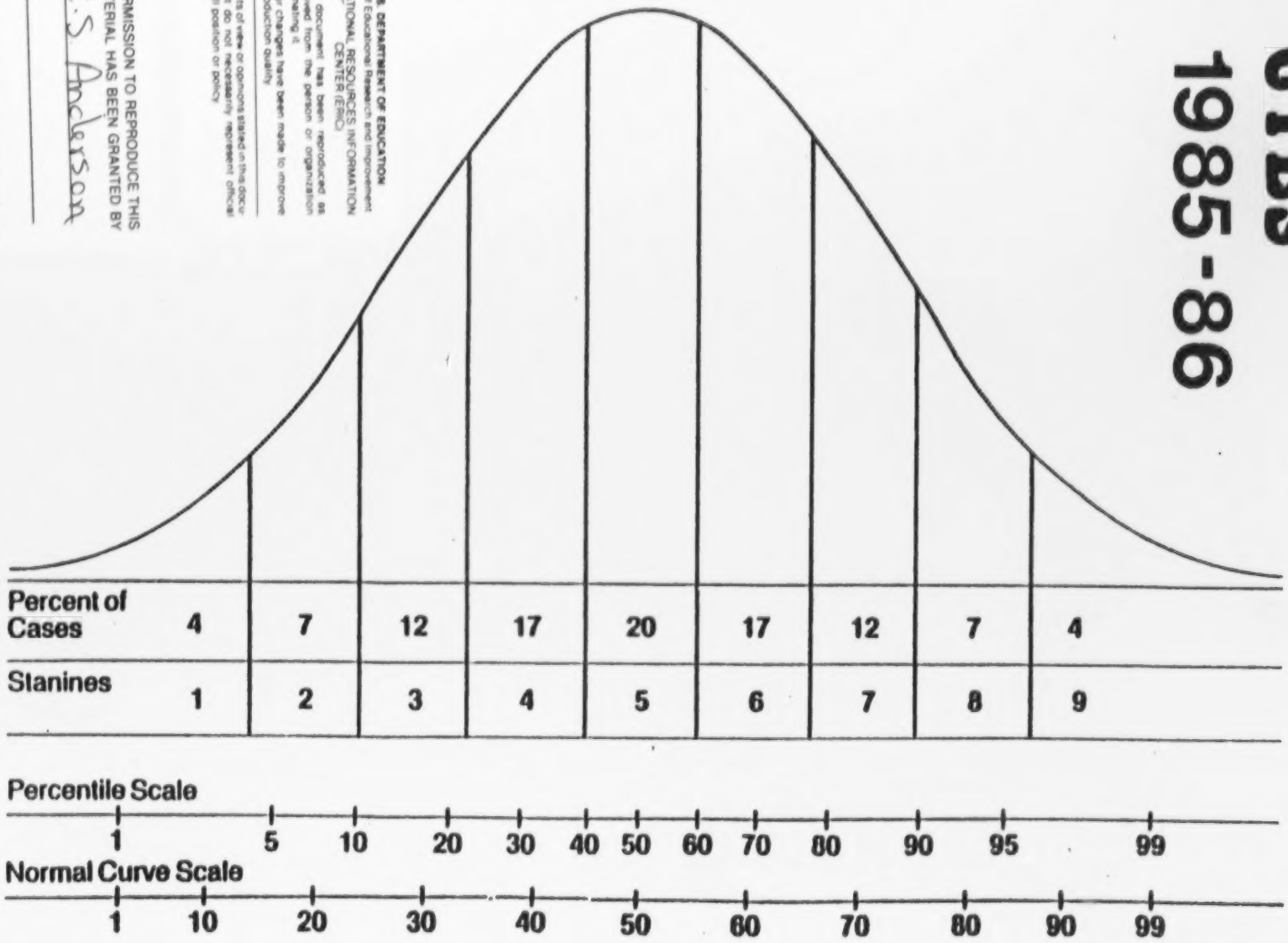
CTBS 1985-86



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COMPREHENSIVE TESTS OF BASIC SKILLS:

1985-86 Test Results

Crete-Monee School District 201-U

Crete, Illinois

Prepared by:

Carolyn S. Anderson, Ph. D.

Director of Evaluation and Curriculum

October 6, 1986

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I. INTRODUCTION

What Tests Were Administered?

The CTBS is a battery of norm-referenced tests measuring basic skills achievement on a set of objectives.

The Comprehensive Tests of Basic Skills (CTBS) is a battery of norm-referenced tests measuring basic skills achievement on a set of objectives commonly included in state and local curricula. The tests provide information about the performance of students in a district relative to these objectives (criterion-referenced results) and relative to a group of students taking the same test across the country (norm-referenced results).

Specific objectives measured under each subtest are listed in Appendix 1. A summary of this content is described below:

Reading: Measures visual and sound recognition of letters and words (grades 2 and 3), word attack skills, recognition of word meanings and affixes, skill in understanding sentences and paragraphs, including passage details, character analysis, main ideas, generalizations, written forms, and author techniques.

Spelling: Measures application of rules for vowels, consonants, and structural units in words.

Language: Measures application of punctuation and capitalization skills, editing skills, use of parts of speech, skill in writing sentences and/or paragraphs which are clear and well-organized.

Mathematics: Measures skill in addition, subtraction, multiplication and division, and understanding of numeration, number sentences, number theory, problem solving, measurement, and geometry.

Reference Skills Test: Measures ability to find and use information, including parts of books, dictionary symbols, library skills, and consumer skills.

Who Was Tested?

During the week of April 14, the basic battery was administered to nearly 98% of the regular and resource room special education students in grades 2 to 12.

During the week of April 14, the basic battery of the CTBS (Form U, 1981 Edition) was administered to students in grades 2-12. Students tested included:

* 201 resource room special education students
* 3417 regular education students
* 3618 total (plus a few self-contained students)

Out of an enrollment of 3724, this total represents over 97% (almost identical to last year's testing rates).

This is a very high testing rate for public schools.

A testing rate this high is almost unheard of in public school testing. Efforts of teachers, counselors and administrators and the cooperation of parents and students are clearly responsible for such a high turnout. When districts do not have high attendance during testing week and/or do not make it a priority to test every child, their results may not accurately reflect district achievement. In fact, if those not tested are largely the low achievers, their reported scores may be deceptively high.

On Which Students Are Scores Reported?

Scores are reported only for students in the regular program.

Scores are reported on all students tested except those receiving BD or LD services. Because the norm group includes a much smaller percentage of these students, to include them in a report of norm-referenced results would be inappropriate.

Four groups of students are identified in the charts included here:

"All" students includes all regular students.

* "All" students refers to all regular students tested on a particular subtest at a particular level.

"Over two years" includes students enrolled for at least 2 years.

* "Over two years" refers to students who have been in the district over 2 years, or entered before the end of the 1983-84 school years. They are sometimes called "returning" students.

"Second year" students have been here 1-2 years

* "Second year" refers to those students who were marked as new on the last CTBS test administered in April 1985. These students entered the district after the last day of school in 1984. These students have been in the district between 1 and 2 years.

"First year" students have been here less than 8 months.

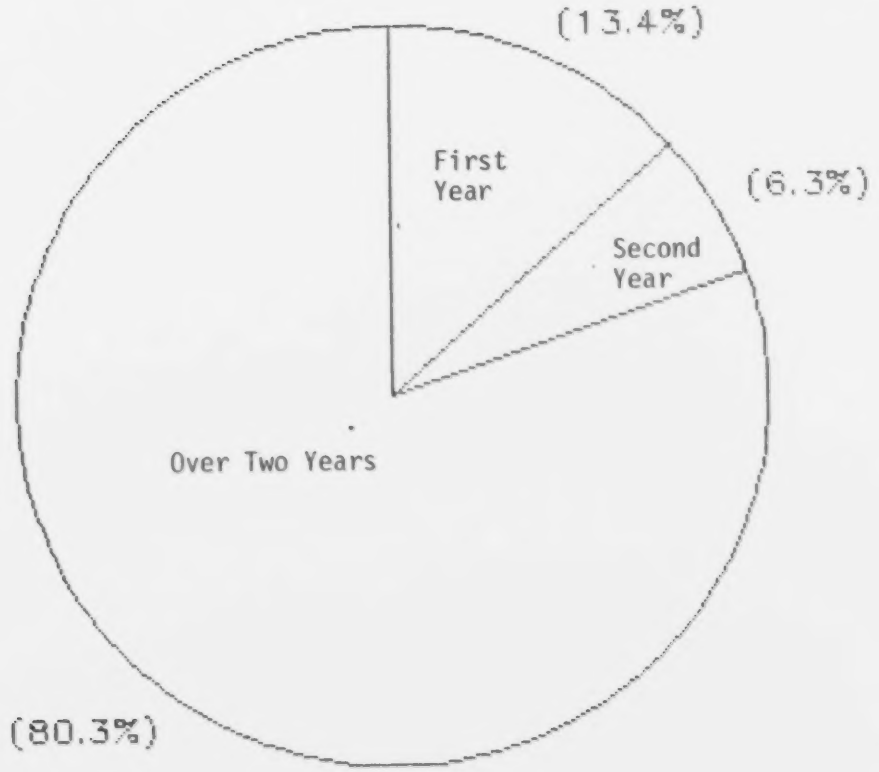
* "First year" refers to those students who enrolled after the last day of school in 1985. This catagory includes students who were in the district less than eight months.

Figure 1 shows the percentage of students tested in April 1986 who were 1st, 2nd or returning (over two years) students.

FIGURE 1

PERCENT NEW AND RETURNING STUDENTS

1985-86



II. THE MEANING OF TESTING TERMS/CONCEPTS

The results of this year's basic skills testing will be provided using several different scores, all of which are based on conversions from the raw score. To assist in interpreting these results, the following definitions are provided.

Percentage is a measure of proportion.

Percentage is a measure of proportion, whether of students who scored at some level or of items marked correct. For example, we might say that 70 percent of our students scored at or above the national average.

Percentile ranks represent the percentage of students who obtained a lower score.

Percentile Ranks range from 1 to 99 and represent the percentage of students in the norm group who obtained a score below a given student's score. A percentile rank of 61, for example, means that the student scored higher than about 61 percent of the students in the norm group. It does not mean that the student got 60 percent of the items right. The intervals between percentile ranks are not equal, so this statistic cannot be used to compare scores across grade levels or subtest. For example, the difference between a percentile rank of 90 and 95 is much greater in terms of raw scores or scale scores than the difference between 50 and 55. Nor can we say that a student scoring at the 80th percentile performed twice as well as one scoring at the 40th percentile. Percentiles can only be compared across subtests to show that students are relatively higher in one subtest than in another--relative to the norm group. This limitation also pertains to comparisons across grade levels.

NCE's have equal intervals and can be used to make meaningful comparisons among tests and subtests.

Normal Curve Equivalents (NCEs) are standardized scores which also range from 1 to 99, with an average of 50. Since the intervals are equal, the difference between two scores on the scale has the same meaning, whether the difference is between 9 and 12 or between 60 and 63. Thus with NCEs we can make more meaningful comparisons between different achievement tests and between different tests within the same battery.

Quartiles represent the division of students into 4 groups.

Quartiles represent the division of students into four groups, based either on national or local norms. For example, students scoring between the 76th and 99th national percentile rank are in the top (4th) quartile; those between the 50th and 75th percentile are in the 3rd quartile.

III. INTERPRETING THE RESULTS

Cautions in Interpretation

A test score is only an estimate of performance.

* A test score or scores (whether of individuals or groups) should be interpreted only as an estimate of performance. It is not a reflection of some permanent or absolute characteristic. Although we do not report scores for groups of students with confidence bands, we need to remember that point differences may or may not be important--that is, not due to chance.

Test scores tell us HOW WELL an individual or group performed, but not WHY.

* Reported scores give us an estimate of current achievement: how well an individual or group performed on specified skills at one point in time under certain circumstances. The scores do not tell us why the person or group performed in this way. Results may be a function of test anxiety, prior knowledge of items, misunderstanding directions, test wiseness, lack of familiarity with test formats, motivation to do well, congruence between test and curriculum or instruction, as well as a function of student skill level--what we think we are measuring when we administer a basic skills test.

Test scores should never be the sole basis for decision.

* Test scores are only one of many available sources of information and should never be the sole basis of decision or interpretations about persons or programs.

Questions Addressed

Seven questions are addressed in this report.

* How did all our students perform compared to the nation in Reading, Language, Math, and Total Battery? (Table 1, Appendix 2)

* What percentage of our students scored in each quartile of the nation? (Figure 2)

* Does the percentage of our students who score in the top half of the nation increase over time? (Figure 3, Appendix 3)

* How well did our high, middle and low achieving students perform across two years? (Figure 4, 5, 6)

* Does our program have a positive impact on students who attend for over two years? (Figures 7, Table 2)

* Do new students cause our overall scores to be lower? (Figures 8, 9)

* How much difference is there in performance among the different grade levels? (Figure 10)

How did all our students perform compared to the nation in Reading, Language, Math, and Total Battery?

Table 1 is based on percentile ranks (see Appendix 2 for actual figures). It includes all students and not just those who have been in the district over two years.

TABLE 1

PERFORMANCE OF EACH GRADE LEVEL COMPARED TO THE NORM GROUP

We were better than...	Reading	Language	Math	Total
80% of the nation in grade:				6
70-79% of the nation in grade:	2 6	2 6 9	2 6 7 5	2
60-69% of the nation in grade:	4 7 8 5 9	3 7 10 4 8 11 5 12	3 10 4 8 9	3 7 10 4 8 5 9
50-59% of the nation in grade:	3 10 11 12		11 12	11 12
40-49% of the nation in grade:				
30-39% of the nation in grade:				
20-29% of the nation in grade:				
less than 20% of the nation				

* We were better than the national average in all 11 grades tested.

* In Language, we were better than at least 60% of the nation in all grade levels. Overall, this was our strongest subtest.

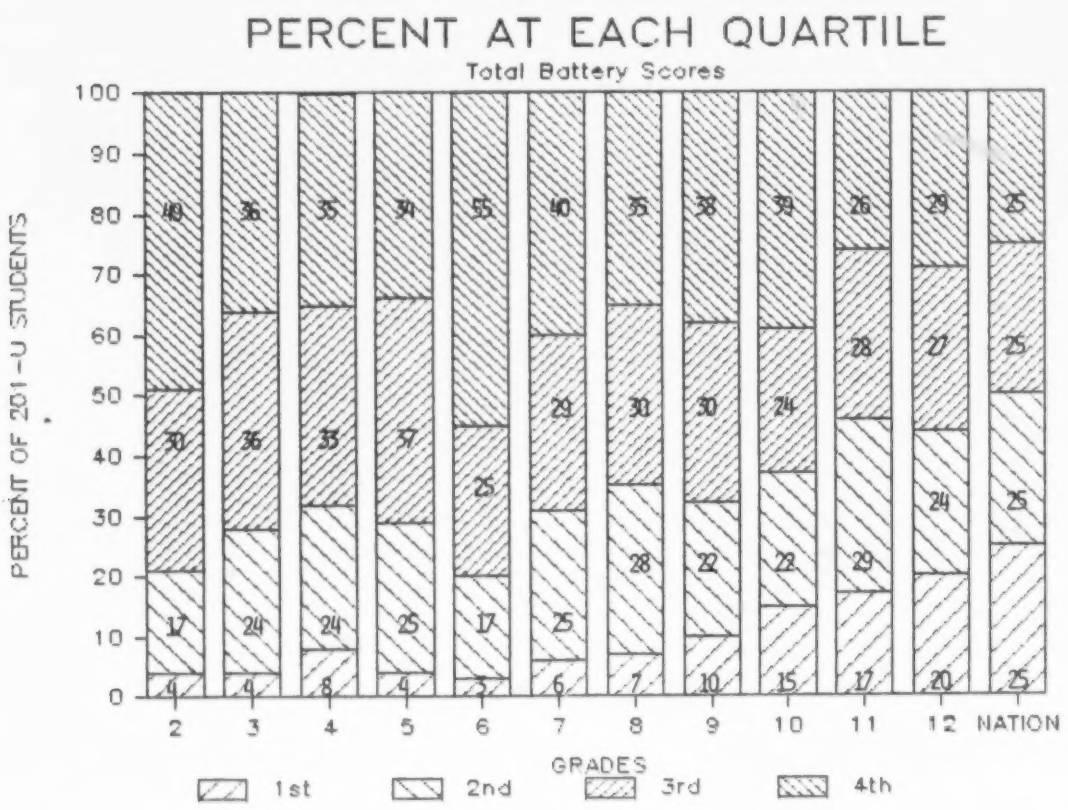
* Only 4 grades in Reading and 2 grades in Math were below the 60th percentile rank.

* This year we ranked at or above 70% of the nation in 11 subtests and grades, as compared to only 5 last year.

What percentage of our students scored in each quartile of the nation?

Figure 2 shows the percent of 201-U students who scored in each of the 4 national quartiles (4 is high, 1 is low). We would expect 25% in each quartile, if we were performing as an average school district.

Figure 2



* We are better than average at every grade level.

* Our best performance is at 2nd and 6th grade, where 79% and 80% respectively scored in the top half of the nation.

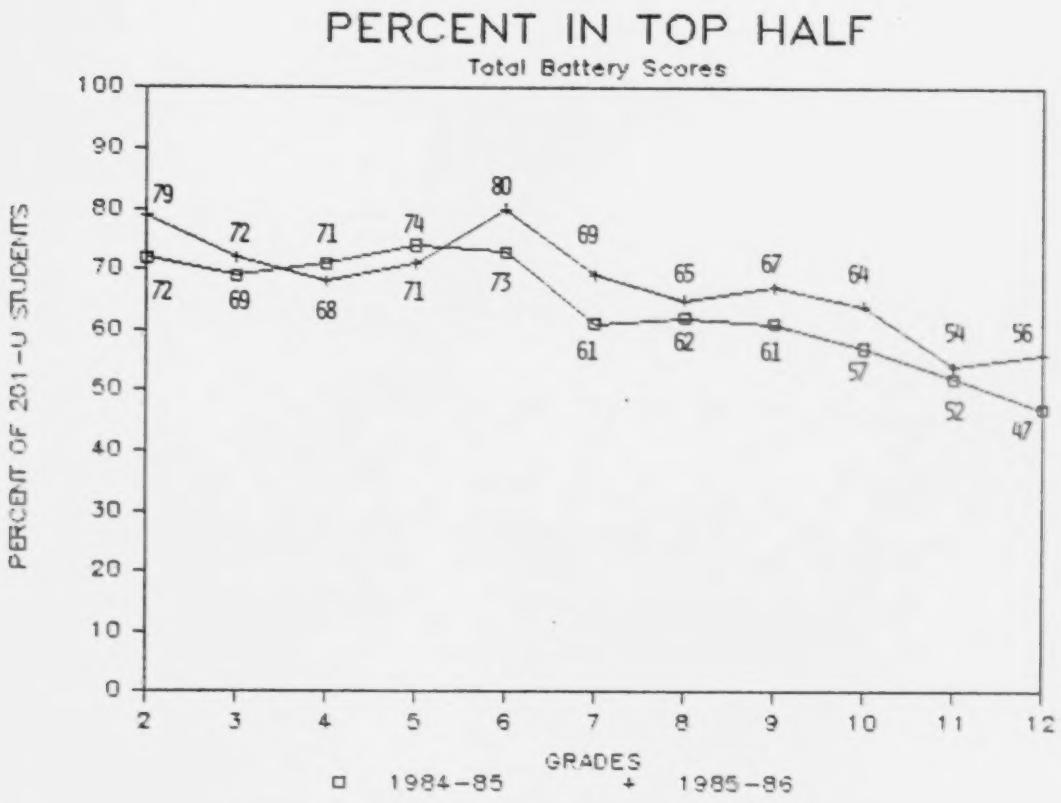
* Generally, less than 1/3 of the students at a grade level were below the national average.

Does the percentage of our students who score in the top half of the nation increase over time?

The most highly recommended measure of school effectiveness is the increase in percentage of students scoring in the top two quartiles of the norm group.

Figure 3 makes some comparisons on this measure between 1984-85 and 1985-86 in the total battery results. (Appendix 3 shows results for Reading, Language and Math for 1985-86.)

Figure 3



* We are clearly improving, in that more students are falling in the top half of the nation across all grade levels.

* Largest gains were in grades, 2, 6, 7, 9, 10 and 12.

* Grades 4 and 5 are very slightly lower this year. Recall that as 3rd and 4th graders last year, these students also had slightly depressed scores.

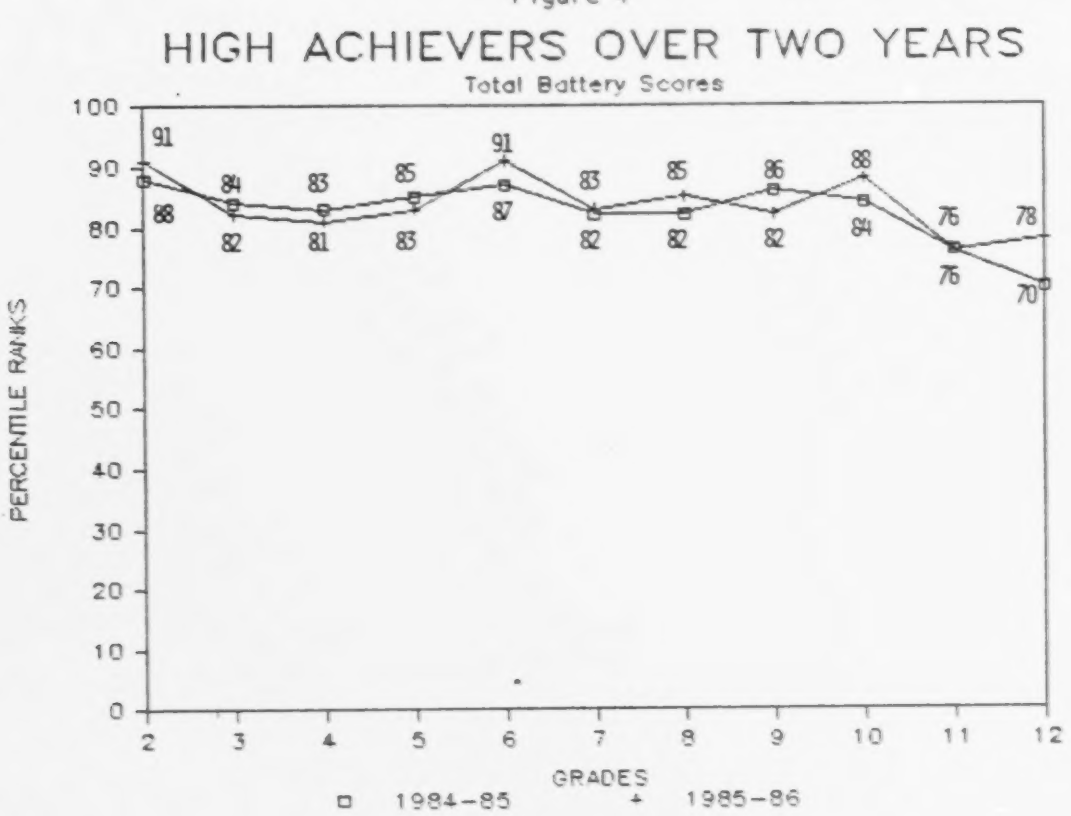
How well did our high, middle and low achieving students perform, across two years?

If our students were no different from the norm group, we would expect our above average students to score better than 75% of the nation, our average students to score better than 50% of the nation, and our below average students to score better than only 25% of the nation.

"Above average" students are defined as students whose performance surpasses 75% of the district. "Average" students score better than 50% of their peers. (They fall at the midpoint of all district scores for that grade level.) "Below average" students performed better than only 25% of their peers.

Figures 4, 5, and 6 show what percent of the norm group scored below each of these groups of 201-U students on the total battery, over two years.

Figure 4



* We are above the expected score at all grade levels for all three groups.

* The general trend across two years is upward.

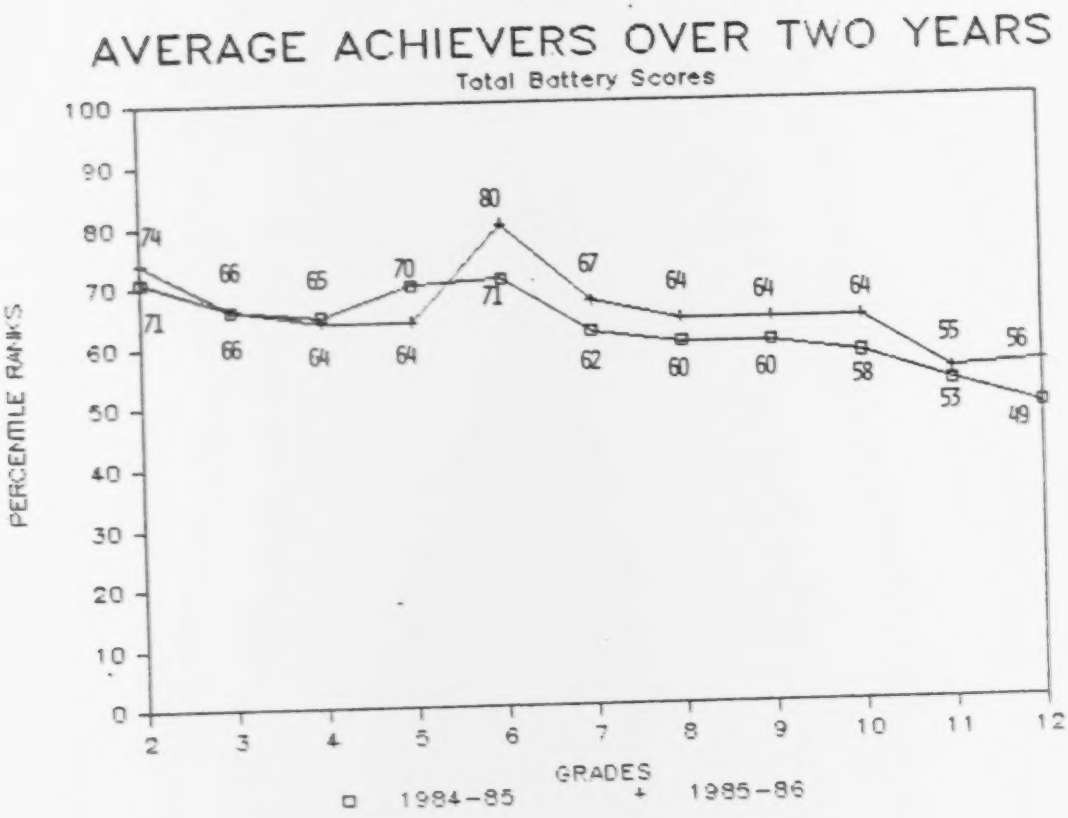
* Lower scores at grades 4 and 5 reflect lower achievtng classes last year in grades 3 and 4.

* High achievers perform about equally well across grade levels.

* In grades 2 to 10, these students surpass over 80% of the norm group.

* There is almost no difference across grade levels between the two years. This fact is actually to our credit because with very high students, we would expect some drop in scores, toward the mean. Since this drop did not occur, we can conclude that a true impact exists.

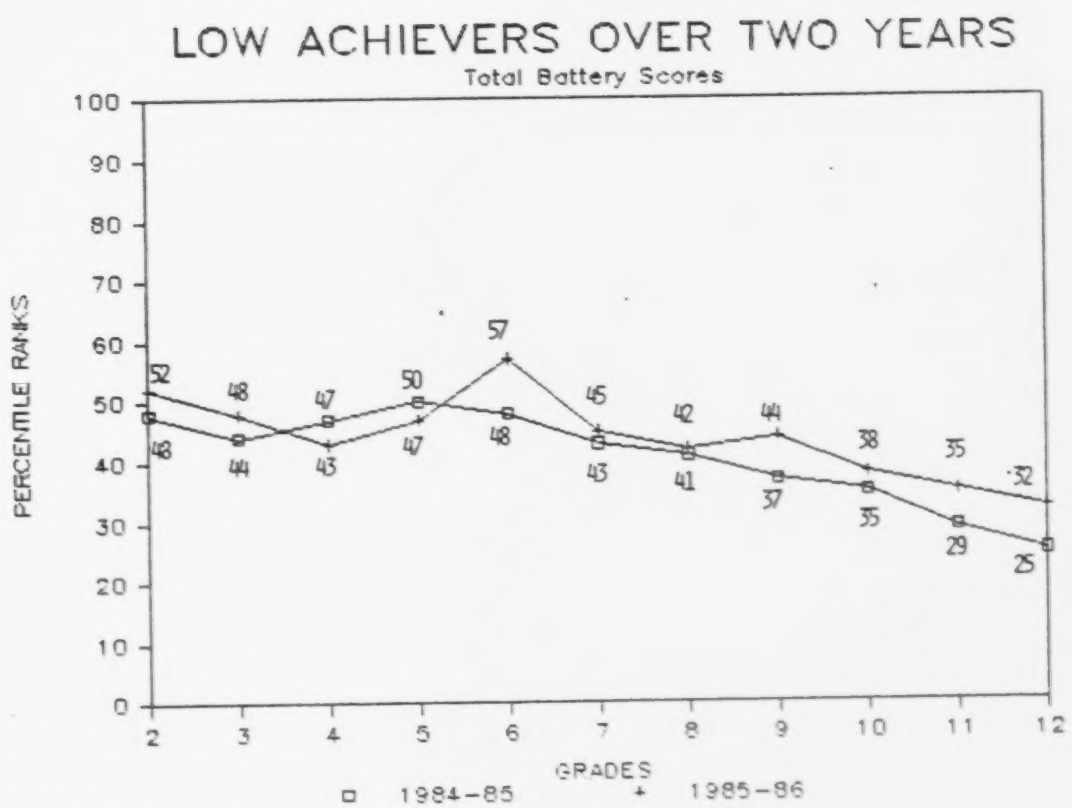
Figure 5



* Gains for average achievers are very decided and clear, particularly from 6th to 12th grade.

* The average student consistently scores better than 80% of the nation.

Figure 6



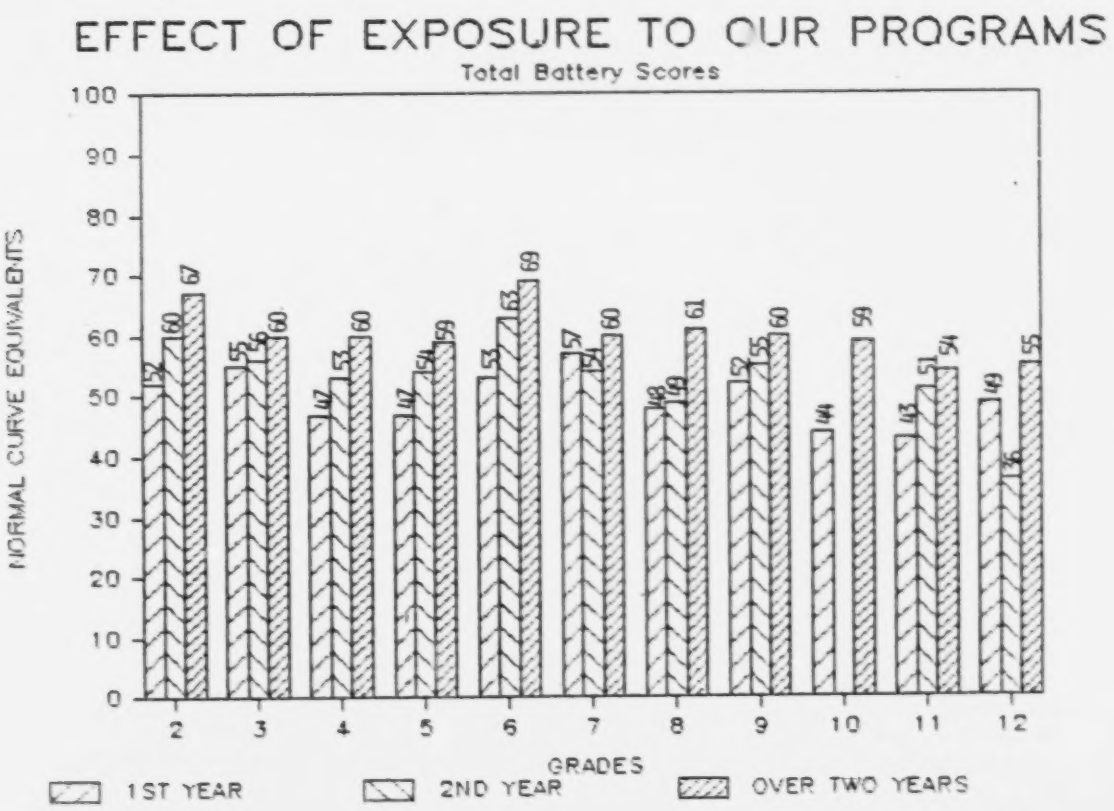
* The below average 201-U student has improved over the last two years.

* These gains are the most dramatic. Since at most grade levels low achievers score near the national midpoint, the gain could be a reflection of growth.

Does our program have a positive impact on students who attend for over two years?

Figure 7 compares the performance of students on the total battery, divided by their length of enrollment in the district. We believe this chart shows evidence that our program has its most positive impact on students who have been in the district for several years.

Figure 7



* 1st year students are decidedly lower than students who have attended for over 2 years. We have not had time to develop their skills to the level of on-going students.

* The absence of a 2nd year group in 10th grade is a coding error.

* Students tested in their second year performed better than 1st year students, but not as well as those enrolled for over two years.

Some caution is advised in interpreting the data about length of enrollment. The 2nd year data does not include all students who were 1st year students the previous year. In each class, a substantial number of these students have left (anywhere from 29% to 54%), or were not coded correctly on the form. This means that we don't know how all 1984-85 new students would have performed in 1985-86. We only know the performance of those who stayed performed. The small study on transfers done last year found that those who left were not significantly different from those who stayed. However, this sample was small and did not include all grade levels.

Table 2 shows how much higher our long-term students are (in NCEs) compared to the average 1st year student in specific subject areas. Considering the size of the group, a difference of at least 3 or 4 points suggests an important program effect.

TABLE 2

Average performance of long-term students compared to first year students.

GRADE	READING	LANGUAGE	MATH
2	+ 7	+14	+20
3	+11	+ 8	+ 8
4	+13	+13	+15
5	+10	+14	+16
6	+11	+11	+12
7	+ 4	+ 9	+10
8	+10	+11	+10
9	+ 5	+ 9	+ 7
10	+12	+13	+16
11	+ 7	+ 4	+10
12	+ 5	+ 8	+ 3

* Important differences exist at all levels.

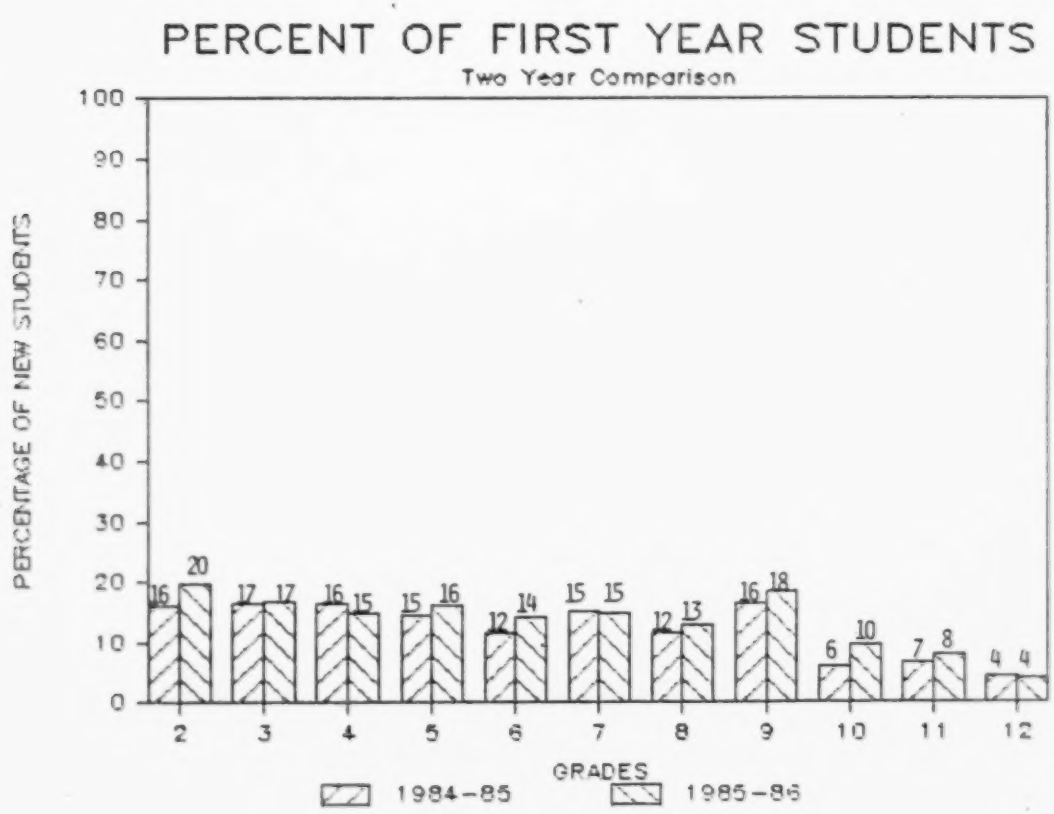
* At most grade levels, the largest difference is on Math. This result can be explained becuase Math is a subject which is especially affected by school instruction, because the skills are not practiced in the home as much as are Reading and Language.

Do new students cause our overall scores to be lower?

Since we have shown that at most grade levels incoming students score considerably lower than students enrolled for at least two years, it is valid to ask whether these new students adversely affect our over all scores. The answer depends on both the percentage of new students and their average achievement level.

Figure 8 shows the percent of new students over two years at all grade levels.

Figure 8

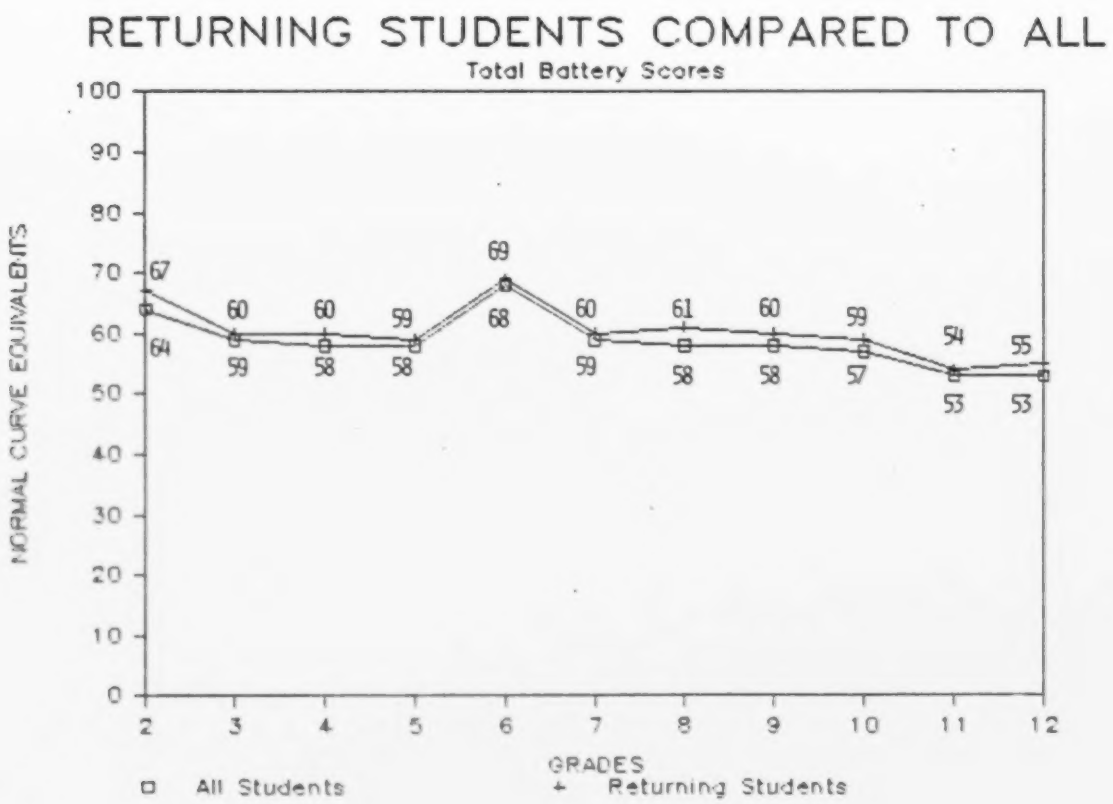


* Our greatest increase in new students came at grades 2 and 10.

* Grades 2-9 experience a greater influx of new students than do grades 10-12.

Figure 9 shows the scores for all students as compared to scores of students enrolled over two years. Any difference can be attributed to the impact of new students.

Figure 9



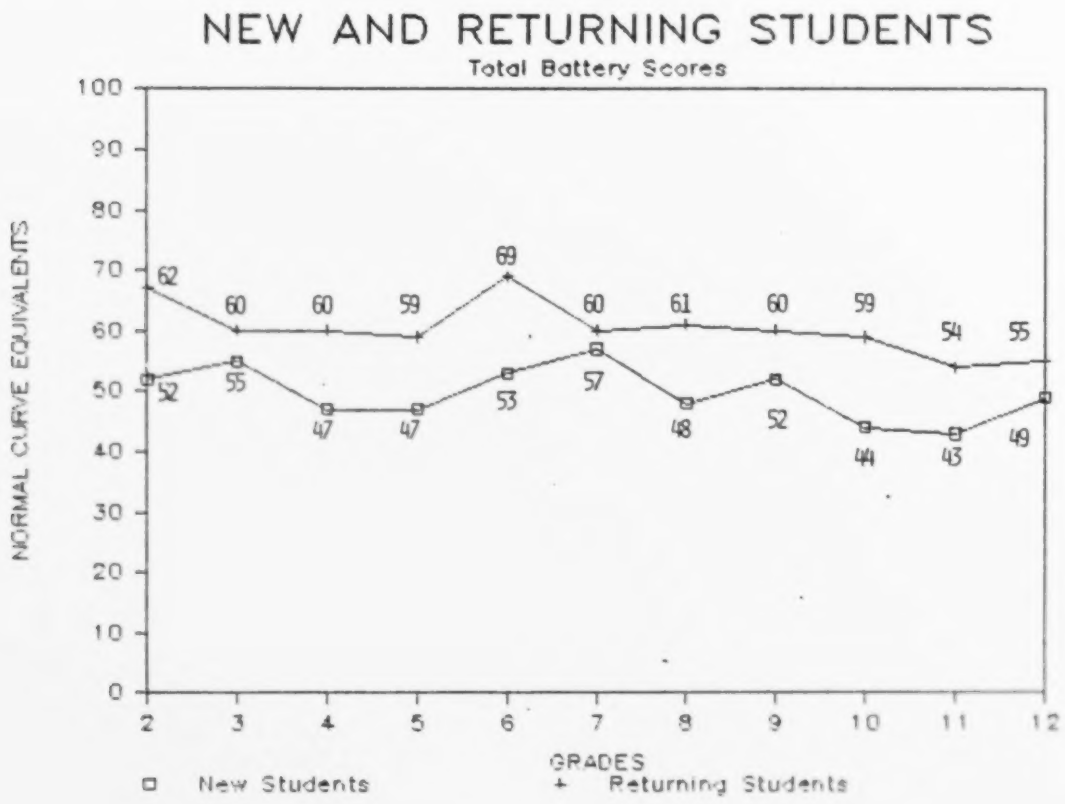
* It is evident across all grade levels that new students have relatively little effect on average scores.

* Differences apparently relate more to the average achievement level of new students than precent of new students.

How much difference is there in performance among the different grade levels?

We hope that, despite some variability due to curriculum-test match, student performance (for those attending district schools over several years) will be comparable across grade levels. We expect new student performance to show greater variability - variability that is due to different curricular experiences outside our program. Figure 10 uses NCEs to contrast the performance of new and returning students with regard to this question.

Figure 10



* New student performance, as expected, is quite inconsistent from year to year, reflecting widely varying school experiences.

* Performance of students enrolled for over two years (returning students) is remarkably stable this year. Except for two peaks in grades 2 and 6, the average is 60 NCEs across all grades.

Explanations for Results

As noted earlier, test scores tell how well we performed, not why we performed that way. Nevertheless, we can suggest some hypotheses about why these results were obtained. Some of these hypotheses are supported in the data and some cannot currently be investigated, given available information.

1. The objectives of the curriculum and test match better at some grade levels than others. Second and sixth grade have a strong match, as indicated over a two year period. The lowest match occurs at grades 10-12 where basic skills may not always be taught or reviewed directly.

2. Over time in the district, we can improve student performance.

3. Teachers and administrators made extensive use of 1984-85 results in assessing objectives where a group of students needed extra work and where instruction needed to be modified. In effective schools, administrators, as the instructional leaders, review standardized test data, identify areas of weakness, and develop a plan to remediate those.

4. The importance of the test is emphasized. Parents and students responded with high attendance on test days. Students were prepared in terms of knowing what tests were to be given, how long each one was, and how results were to be used.

5. Students who do not do as well may be students who do not attend school as regularly, or who do not receive sufficient reinforcement at home. We cannot, at this time, track the performance of students by attendance rate, but anticipate this analysis being possible within two years.

6. Differences over time are likely to be greater than is represented in this report, when student performance can be tracked over time for individuals. Grouped data (for instance, when all students at a given grade level in year one are compared to all students in the next grade level in year two) is likely to mask true differences because the groups are not identical.

IV. SUMMARY AND CONCLUSIONS

Summary of Results

1. We continue to test nearly 100% of our students, including all resource room special education students.

2. Slightly more than 1 in 5 students tested has been in the district less than 2 years.

3. Our best performance, compared to the norm group, is in grades 2 and 6, and in language and math across all grade levels. All grades were above the national average, however, and five grades achievement surpassed 70% of the nation in at least one subtest.

4. Only a very small percent of 201-U students scores in the bottom quarter of the nation, at most grade levels.

5. Compared to 1984-85, the percentage of students scoring in the top half of the nation has increased in all but two grade levels, where the decline is insignificant and explanable by last year's performance.

6. Even our below average students (expected to perform at the 25th percentile rank) perform far above that level. At some grades, they surpass 50% of the nation.

7. Our top and average students also outperform their expected scores. Above average 201-U students are better than over 80% of the nation at most grade levels, and the average student is better than 60%.

8. New students continue to be at risk and overall score considerably lower than those who have been exposed to the district program for over two years.

9. Differences between new and returning students are generally greatest in Math, although it is substantial in all subjects and grades. New students, however, have only a minimal effect on our overall scores.

10. Performance is relatively stable across grade levels for students enrolled for at least three years. There are two peaks at grades 2 and 6, and very little decline at the secondary level this year.

Conclusions

Many curriculum and instruction innovations have been initiated in the last two years. These include the curriculum committee and program development process, the staff development (Science of Teaching) program, and the Math Their Way curriculum, as well as an increase in access of teachers to test data. There are a number of positive signs already that these program innovations are being implemented.

We should see continued evidence in test scores that these programs are having an impact. It is not reasonable to expect massive gains in one year, but over the next five (5) years, we should see measurable impact.

Our performance is less variable and higher than last year, largely because of higher scores at the secondary level. The secondary teachers, especially in Language, Arts and Math, spent several hours critiquing their results and identifying areas where extra work was needed. This effort may have had an impact.

At the elementary level, results are again very commendable. Performance at grades 2 and 6 was the best in the district. Last year's 5th graders did very well, and since the 6th grade curriculum is a good match to the test, this 5th grade performance was amplified in 6th grade. Similarly,the 2nd graders who did well last year dropped slightly in 3rd grade, where the curriculum and test objectives match less well. Fourth and fifth graders were very slightly lower than students last year in these grades. Although the 4th and 5th grade test matches our curriculum better than does the 3rd and 4th grade test, these two groups of students may underperform other classes. If this hypothesis is true, we may see slightly lower scores next year in grades 5 and 6.

We consider the results very encouraging and indicative of the positive direction of the district.

Dissemination of Results

In addition to this report, administrators and counselors have been inserviced concerning the results and how to communicate them to parents and students. Evening meetings or other arrangements were made at the building level to communicate with parents about results. At the secondary level, students will also discuss their individual report with their counselor.

Elementary teachers have been given criterion-referenced reports concerning the performance of last year's students and can request this information on their current class, so that they can establish personal goals for instruction. (At the secondary level, these analyses will be done by department and level as well as by individual course.) Division leaders at the high school and counselors and principals at the junior highs will be helping teachers analyze this data.

Next Year Plans

Plans to improve the testing program for next year are underway. A teacher and administrator handbook is being compiled, including all the steps and responsibilities involved in managing the testing program, as well as ideas for using the data more effectively.

A committee of teachers will be organized to review the CTBS Science and Social Studies test batteries to determine if they are valid for our use. They will be considered appropriate if we can show a match between the curriculum and the test objectives. If such a match does not exist, the test would not be effective in assessing how well we were instructing students.

We are also exploring some other ways to generate the data to make them more useful for teachers and administrators.

APPENDIX 1. CTBS OBJECTIVES FOR EACH LEVEL

Reading

LEVEL

Word Attack

10 The student will identify a pictured object that has the same initial or medial vowel sound as that in a word given orally.
11 The student will identify a word with the same initial consonant sound as that in a word given orally.
12 The student will identify a word with the same final consonant sound as that in a word given orally.
D 13 The student will identify a word whose initial or final cluster or digraph has the same sound as that in a word given orally.
D 14 The student will recognize a sight word given orally.
D E 15 The student will identify a word with the same short or long medial vowel sound as that in a given word.
D E 16 The student will identify a word with the same diphthong or variant vowel sound as that in the underlined part of a word.
D E 17 The student will identify the number of syllables in a word or identify the root or the affix of a word.
D E 18 The student will recognize a compound word or its components.
E 19 The student will identify the meaning of a contraction.

Vocabulary

20 The student will identify a pictured object as belonging to a category given orally.
21 The student will identify a picture that shows the meaning of an action or thing defined orally.
22 The student will identify a word as belonging to a category given orally.
23 The student will identify a word that means about the same as a word or phrase given orally.
D E F G H J K 24 The student will identify the meaning of an underlined word in a phrase.
D E F G H J K 25 The student will use context to identify the meaning of an unfamiliar word.
E F G H J K 26 The student will identify a word defined by two given meanings.
F G H J K 27 The student will use context to supply a missing word in a sentence or paragraph.
F G H J K 28 The student will identify the meaning of a prefix or a suffix.

Reading Comprehension

29 The student will identify a picture that shows the meaning of a written sentence.
D E F G H J K 30 The student will extract details from a passage to answer who, what, where, or when questions.
D E F G H J K 31 The student will analyze the feelings, traits, or motives of characters in a passage.
D E F G H J K 32 The student will identify the main idea, the author's purpose or viewpoint, or the tone and mood expressed in a passage.
D E F G H J K 33 The student will draw conclusions from or recognize cause-and-effect relationships in a passage.
E F G H J K 34 The student will differentiate between reality and fantasy, between fact and opinion, or between forms of writing.
F G H J K 35 The student will recognize techniques of persuasive writing or figurative writing.

Spelling

D E F G H J K 36 The student will identify the correct spelling of consonant phonemes in words.
D E F G H J K 37 The student will identify the correct spelling of vowel phonemes in words.
D E F G H J K 38 The student will identify the correct spelling of structural units in words.

Language

Language Mechanics

Capitalization

D E F G H J K 39 The student will identify the correct use of a capital letter for the pronoun I, proper nouns, and proper adjectives
D E F G H J K 40 The student will identify the correct use of a capital letter for beginning words and titles.

D = Grade 2
E = Grade 3
F = Grade 4
G = Grades 5 & 6
H = Grades 7 & 8
J = Grades 9 & 10
K = Grades 11 & 12

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TABLE 1 (continued)

Punctuation

D	E	F	G	H	J	K	41	The student will identify the correct use of a period, question mark, exclamation point, or comma in a sentence.
		F	G	H			42	The student will identify the correct use of quotation marks in a sentence.
					J	K	43	The student will identify the correct use of a colon or semicolon in a sentence.

Capitalization and Punctuation

		F	G	H	J	K	44	The student will identify the correct capitalization and punctuation in a passage or letter.

Language Expression

Usage

D	E	F					45	The student will identify the correct noun to complete a sentence.
D	E	F	G	H	J	K	46	The student will identify the correct pronoun to complete a sentence.
D	E	F	G	H	J	K	47	The student will identify the correct verb to complete a sentence.
D	E	F	G	H	J		48	The student will identify the correct adjective or adverb to complete a sentence.

Sentence Structure

D							49	The student will identify the correct word order for a sentence or will identify the question that is correctly rewritten from a statement.
D	E	F				K	50	The student will choose the correct part of speech to complete a sentence or will identify the subject or predicate of a sentence.
		F	G	H	J	K	51	The student will identify a sentence as being complete, incomplete, or run-on.

Paragraph Development

		F	G	H	J	K	52	The student will identify the sentence that best combines a group of sentences or will identify the connective that best completes a sentence.
		F	G	H	J	K	53	The student will identify the topic sentence for a paragraph or will identify the sentences that best develop a topic.
		F	G	H	J	K	54	The student will identify the correct sentence sequence for a paragraph.
			G	H	J	K	55	The student will identify the sentence that is most clearly expressed or will identify the sentence that detracts from the clarity of a paragraph.
				H	J	K	56	The student will identify the group of sentences that is most appropriate for a special kind of writing.

Mathematics

Mathematics Computation

D	E	F					57	The student will add whole numbers.
		F	G	H	J	K	58	The student will add decimals or fractions.
D	E	F					59	The student will subtract whole numbers.
		F	G	H	J	K	60	The student will subtract decimals or fractions.
	E	F	G				61	The student will multiply whole numbers.
			G	H	J	K	62	The student will multiply decimals or fractions.
	E	F	G				63	The student will divide whole numbers.
				H	J	K	64	The student will divide decimals or fractions.
				H	J	K	65	The student will solve computation problems involving integers.
					J	K	66	The student will solve computation problems involving algebraic expressions.
					J	K	67	The student will solve computation problems involving exponents or per cents.

Mathematics Concepts and Applications

D	E	F	G	H	J	K	68	The student will demonstrate an understanding of numeration.
	E	F	G	H	J	K	69	The student will demonstrate an understanding of number sentences.
	E	F	G	H	J	K	70	The student will demonstrate an understanding of number theory.
D	E	F	G	H	J	K	71	The student will demonstrate an understanding of problem solving.
D	E	F	G	H	J	K	72	The student will demonstrate an understanding of measurement.
D	E	F	G	H	J	K	73	The student will demonstrate an understanding of geometry.
							74	The student will demonstrate an understanding of geometry and measurement units.

Reference Skills

		F	G	H	J		75	The student will locate information in books.
		F	G	H	J	K	76	The student will locate information in the dictionary.
		F	G	H	J	K	77	The student will locate information in the library.
				H	J	K	78	The student will locate information in consumer sources.

APPENDIX 2. AVERAGE PERCENTILE RANKS FOR ALL STUDENTS.

Grades	Reading	Language	Math	TOTAL
2	71	74	78	74
3	57	61	68	66
4	65	64	64	64
5	64	64	74	64
6	75	73	77	80
7	65	66	70	67
8	64	66	60	64
9	60	70	62	64
10	59	64	61	64
11	51	60	50	55
12	52	60	50	56

APPENDIX 3. PERCENT OF 201-U STUDENTS IN TOP HALF OF NATION (1985-86)

Grades	Reading	Language	Math	TOTAL
2	78	78	76	79
3	63	61	71	72
4	66	70	64	68
5	69	70	79	71
6	80	78	81	77
7	66	66	73	69
8	65	64	59	69
9	61	72	62	67
10	59	65	55	64
11	50	63	50	54
12	52	61	49	56